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# END TERM EXAMINATION

**FIRST SEMESTER (B.TECH) JANUARY-2024**

**Paper Code: ETME-105** **Subject: Manufacturing Processes**

**Time: 3 Hours** **Maximum Marks :75**

***Note: Attempt five questions in all including question no. 1 which is compulsory. Select one question from each unit. Assume suitable missing data.***

Q1. **Answer questions** **(2.5x10=25)**

(a) Define Stiffness, Toughness and Resilience.
(b) What type of shrinkage does the riser take care off? Explain.
(c) Mention the composition of Mild steel.
(d) What do you understand by 'Mechanical Working' and 'Plastic Flow' of a material?
(e) Explain the threading operation used in Fitting.
(f) Classify different type of Welding processes used in industry.
(g) List any 4 important functions of flux used in fusion welding.
(h) Which type of flame would you suggest for welding of Copper and Aluminum?
(i) What are the different methods of producing metal powders?
(j) Name any 6 tools used in Sheet Metal shop.

**UNIT-I**

Q2. (a) Summarize the important reactions occurring in different zones of Cupola furnace with the help of a neat sketch. **(6.5)**
(b) How carbon steels are classified on the basis of carbon percentage? List at least one application for each type. **(6)**

Q3. (a) What is the difference between Mould and Pattern? Discuss any 4 types of pattern. **(6.5)**
(b) Explain the important steps in production of Lost Wax Casting with a neat sketch. **(6)**

**UNIT –II**

Q4 (a) How are files classified? Explain. **(6.5)**
(b)How does Hot extrusion differ from Cold extrusion? Discuss their relative merits and demerits **(6)**

Q5 (a) Explain various operations performed in Fitting shop with neat sketches. **(6.5)**
(b) Why are forgings sometimes heat treated? What main considerations will you follow in designing a forging? **(6)**

**UNIT –III**

Q6. (a) What is the difference between an Arc and a Spark? Explain the working of Submerged Arc Welding with a neat sketch. **(6.5)**
(b) List the common welding defects along with their causes and remedies. **(6)**

Q7. (a) What is the role of polarity in Welding? Explain the principle of Atomic Hydrogen Welding with a neat sketch. **(6.5)**
(b) What is the governing equation for Resistance Welding? How is spot welding different from seam welding? **(6)**

**UNIT IV**

Q8. (a) List the different types of sheet metal operations and explain any 3 in detail. **(6.5)**

(b)What is Powder Metallurgy? Explain the various secondary finishing operations used in Powder Metallurgy? **(6)**

Q9. (a) Describe the process of wire drawing and deep drawing with neat sketches. **(6.5)**
(b) What are the main stages of Powder Metallurgy process? Explain the Atomization process in detail. **(6)**

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